

# PATENT COOPERATION TREATY

From the:  
INTERNATIONAL SEARCHING AUTHORITY

To:

James & Wells  
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## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) - 1 MAR 2005

Applicant's or agent's file reference  
42572PCX362

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
**PCT/NZ2004/000305**

International filing date (day/month/year)  
26 November 2004

Priority date (day/month/year)  
27 November 2003

International Patent Classification (IPC) or both national classification and IPC  
Int. Cl. <sup>7</sup> B29C 35/08

Applicant

BLUE MARBLE POLYMERS LIMITED et al

**1. This opinion contains indications relating to the following items:**

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application.   |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the IPEA/AU  
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/NZ2004/000305**

**Box No. I      Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

**PCT/NZ2004/000305**

**Box No. V**      **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims 1-24, 26-36	YES
	Claims 25	NO
Inventive step (IS)	Claims 1-24, 26-36	YES
	Claims 25	NO
Industrial applicability (IA)	Claims 1-36	YES
	Claims	NO

**2. Citations and explanations:**

The present invention relates to methods, associated products and apparatus for the production of biodegradable foam products. The invention lies in controlling key parameters of the heating cycle such as the pressure and microwave energy used, and in doing so balancing the level of expansion against the level of shrinkage of the foaming material so as to produce a soft and resilient biodegradable foam product of reduced density at rapid speed. An important characteristic of the invention is that during the microwave heating cycle, the raw material is subjected to at least one controlled pressure increase and decrease using a compressed gas. The elevated pressure causes the boiling point of the blowing agent present in the raw material to increase, which results in greater vapour pressures being achieved inside the raw material. The greater vapour pressure produces an increase in magnitude of the pressure drop experienced by the water vapour, which in turn increases expansion and therefore lowers the density of the finished foam product.

None of the prior art documents discloses such a method or apparatus which is capable of being used for such a process.

**NOVELTY AND INVENTIVE STEP (Claim 25)**

**WO 2003/037598**

This citation discloses a biodegradable foamed product containing the requirements of claim 25, for instance a biodegradable foamed product with a thickness of approximately 1m, including material properties such as a density falling within the range 10-100kg/m<sup>3</sup>, a soft and resilient structure, and a surface abrasion comparable to polystyrene (*see examples*). The citation does not specifically disclose a cushioning G-value, but as the other material properties are the same, this value will more than likely also fall within the range given in claim 25. Therefore claim 25 is neither novel nor inventive.

**INDUSTRIAL APPLICABILITY**

The invention as described in claims 1-36 is industrially applicable.